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ECC-NSL COMBINED REMEDIAL ACTION  
ALTERNATIVE ANALYSIS

The objective of the ECC-NSL Combined Remedial Action Alternative Analysis (CAA) is to ensure remedial actions undertaken on the two adjacent sites are consistent in their cleanup goals and levels of protection provided to the public health, welfare, and the environment. Also the CAA is intended to eliminate duplication of remedial actions at the sites. As an example, an alternative requiring groundwater treatment may use one treatment system for the extracted groundwater from both sites rather than two systems.

TASK AP - IDENTIFY REMEDIAL ACTION OBJECTIVES AND GENERAL RESPONSE ACTIONS

The nature and extent of site hazards summarized in the remedial investigation endangerment assessments for ECC and NSL form the basis for identifying more specific objectives for the operable units identified. The objectives for the sites are stated for each operable unit in terms reflecting the National Contingency Plan (NCP) and any other state or EPA guidance laws or regulations.

Each remedial objective is stated in terms of actions, including no action, that can be accomplished and not in terms of absolute removal, or restoration to pristine conditions.

Instead, the objectives reflect the NCP objectives to "mitigate and minimize damage" and "provide(s) adequate protection." To assist in quantifying the various risks to the public health, concentrations of contaminants in the various environmental media at which certain standards, criteria, or risks are met are developed. These concentrations, representing various levels of risk at the site, are derived using the same methodology as that used in the endangerment assessment.

General response actions satisfying the remedial action objectives are developed for each operable unit. Each action is intended to specifically address the contaminants and their migration pathways within each operable unit. Though each action is capable of meeting the objective alone, combinations of actions may later prove to be more cost-effective in meeting all the objectives of the operable units. Examples of general response actions include:

- o No actions
- o Containment
- o Pumping
  - Onsite
  - Offsite

- o Collection
- o Diversion
- o Complete removal
- o Partial removal
- o Onsite treatment
- o In situ treatment
- o Storage
- o Onsite disposal
- o Offsite disposal
- o Alternative drinking water supply
- o Relocation of receptors
- o Other offsite measures

A meeting will be held with the U.S. EPA and the State of Indiana to review remedial action objectives and review potential general response actions.

#### TASK AD - ASSEMBLE REMEDIAL ACTION ALTERNATIVES

The ECC and NSL feasibility studies will have developed remedial action alternatives to satisfy the objectives at each site. The CAA FS is intended to minimize duplicative remedial actions at the sites and achieve an overall cost effective remedial action alternative that adequately protects public health, welfare and the environment.

Alternatives will be assembled from the technologies comprising the ECC and NSL remedial action alternatives. It is anticipated that no additional technologies will be developed or screened.

Several remedial action categories have been established by EPA to guide the assembly of remedial action alternatives. At least one alternative should be developed in each category.

- o No action
- o Alternatives that meet the CERCLA goal of preventing or minimizing present or future migration of hazardous substances and protect human health and the environment, but do not attain all applicable or relevant standards. (This category may include an alternative that closely approaches the level of protection provided by the applicable or relevant standards.)
- o Alternatives that attain applicable or relevant federal public health or environmental standards, guidance, and advisories.

- o Alternatives that exceed applicable or relevant federal public health and environmental standards, guidance, and advisories.
- o Alternative specifying offsite storage, destruction, treatment, or secure disposal of hazardous substances at a facility approved under the Resources Conservation and Recovery Act (RCRA). Such a facility must also be in compliance with other applicable EPA standards (e.g., Clean Water Act, Clean Air Act, Toxic Substances Control Act).

Alternatives falling within each of these categories are assembled from the remedial technologies carried forward from screening. The alternatives assembled address all the remedial action objectives and all operable units. The alternatives will represent a range of public health and environmental risks as well as costs.

A review meeting will be held with the U.S. EPA and the State of Indiana to: 1) refine remedial action objectives, 2) review the revised list of potentially feasible remedial actions, and 3) review the viability of the various alternatives.

#### TASK AE - DETAILED ANALYSIS OF ALTERNATIVES

Using data collected in the previous tasks, a detailed written description of each of the alternatives will be prepared to a level of detail sufficient to allow a comparison of alternatives. The following information will be included in the written description.

- o Basic component diagrams for each alternative to be considered, including design criteria, quantities of materials to be handled, efficiency of contaminant removal, and other basic information
- o Major equipment needs and utility requirements
- o Conceptual site layout drawings
- o Preliminary implementation schedule including procurement, construction, and length of O&M period required to achieve objectives

Following preparation of the detailed alternative descriptions, public health and welfare, environmental, technical, and institutional criteria discussed earlier will be evaluated for each alternative. The refined descriptions of alternatives will allow a more accurate projection of public health and environmental impacts as well as technical feasibility, compliance with institutional requirements, and cost.

Cost estimates for the alternative are prepared from cost information included in the U.S. EPA's "Compendium of Costs of Remedial Technologies at Hazardous Waste Sites," the 1985 Means Site Work Cost Data guide, Cost Reference Guide for Construction Equipment 1985, estimates for similar projects, and estimates provided by equipment vendors, POTW's, and hazardous waste transporters and treatment facilities. The costs are order-of-magnitude level estimates, i.e., the cost estimates have an expected accuracy of +50 and -30 percent. The estimated present worth of all remedial alternatives is based on a 30-year period and 10-percent interest rate.

The alternatives will be ranked within each assessment category and overall rankings prepared reflecting all five categories. Procedures specified in the "Superfund Feasibility Study Guidance Document" will be followed. This ranking will be based on professional judgement and will reflect the U.S. EPA, State of Indiana, local, and public input received. The endangerment assessment of the no action alternative prepared during the remedial investigation will be used for comparison with the other alternatives.

#### TASK R4 - PREPARE FEASIBILITY STUDY REPORT

A draft alternative remedial action FS report will be prepared summarizing the data developed during the FS and documenting the alternative remedial actions assessment process.

It will be submitted to the U.S. EPA, the State of Indiana, and other interested parties for comments. The draft FS will be adequate to support the State's and the U.S. EPA's needs during the public comment period before the development of the record of decision (ROD). A review meeting will be held with the U.S. EPA and the State of Indiana.

Following the public comment period, and State and U.S. EPA approval of the recommended action (i.e., notification that the ROD supports the recommended action), the final FS will be submitted for approval. The final report will incorporate U.S. EPA, state, and public comments on the draft report and will document the decision process.

#### TASK PM - PROJECT MANAGEMENT

Under this task the project manager will coordinate and schedule staff, prepare status reports, monitor and control budgets and schedules, maintain project records, and complete project closeout documents.

Other activities normally included in feasibility studies are not scoped in this combined ECC-NSL alternative analyses, but rather will be accomplished in the individual ECC or NSL feasibility studies. These activities include:

- o Preparation of predesign of selected alternative
- o Community Relations activities
- o Attendance at and preparation for Hearings and Public Meetings
- o Support in preparation of the ROD

GLT623/1

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TASK 1.1 - IDENTIFY REMEDIAL ACTION OBJECTIVES AND GENERAL RESPONSE ACTIONS

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#### TASK 1.3 - DETAILED ANALYSIS OF ALTERNATIVES

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#### TASK 1.4 - PREPARE FEASIBILITY STUDY REPORT

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#### TASK 1.5 - PROJECT MANAGEMENT

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Other activities normally included in feasibility studies are not scoped in this combined ECC-NSL alternative analyses, but rather will be accomplished in the individual ECC or NSL feasibility studies. These activities include:

The 1950-1951 period was characterized by a high level of activity in the field of research and development, particularly in the area of the development of new products and the improvement of existing ones.

1950-1951

- 1. Development of new products and the improvement of existing ones.
- 2. Research and development in the field of the development of new products and the improvement of existing ones.
- 3. Research and development in the field of the development of new products and the improvement of existing ones.
- 4. Research and development in the field of the development of new products and the improvement of existing ones.
- 5. Research and development in the field of the development of new products and the improvement of existing ones.

Jeff Spurr

PUBLIC HEALTH AND WELFARE AND ENVIRONMENTAL IMPACTS OF ALTERNATIVES

A1 - NO ACTION

Public Health The impacts are in the endangerment assessment chapter of the RI report. Risk from direct contact and ingestion of soil if site is developed, ingestion of contaminated groundwater, and ingestion of fish from Finley Creek that may bioaccumulate contaminants. The population at risk is limited in size. Releases are unabated.

Environmental See RI report. Reduction of habitat, aquifer resource lost, diversity of aquatic species reduced. Impact on a wetland.

A2 - ACCESS RESTRICTIONS

Public Health If successfully implemented and maintained alternatives would eliminate direct contact and restrict area where groundwater could be water drawn via deed restriction and fencing. Hazard potential is not reduced but exposure limited by alternatives.

Environmental The impacts are the same as A1. The aquifer resources is still lost.

A3 - CAPPING

Public Health Same as A2 except wading and fishing risk are reduced. A potential for a localized inhalation exposure to volatile compounds unless access is restricted. Hazard potential from site is not greatly reduced.

Environmental Impacts are reduced as discharge of volatiles to Finley Creek are greatly reduced. Short-term constrict impact on ditch and Finley Creek.

A4 - CAPPING - PARTIAL GROUNDWATER COLLECTION AND GROUNDWATER TREATMENT

Public Health Same as A3 except benefits are greater. Some contaminated soil is removed, risks with surface waters are greatly reduced. Hazard potential of site is reduced, therefore if institutional controls fail, impact is less. Short-term exposure during excavation.

Environmental Same as A4 except this alternative moves closer to aquifer restoration than preceding.

A6 - CAPPING - GROUNDWATER COLLECTION AND TREATMENT, VAPOR EXTRACTION

Public Health Same as A5 except vapor extraction reduces than contaminant levels in the soil and lowers hazard potential of the site. These will be a limited emission of volatile organic compounds. Could result in limited exposure. Proper health and safety should be followed to minimize exposure. Emission will be over a 2- to 5-year period and declining with time. Impacts should not extend beyond site.

Table ??? (Page 2 of 3)

Environmental	Same as A5 except localized air quality reduction.  A7 - SOIL EXCAVATION WITH DISPOSAL OFFSITE CAPPING - GROUNDWATER COLLECTION AND TREATMENT
Public Health	Excavation will temporarily increase dust <sup>release</sup> . Could release volatiles so there would be a localized <del>negative health threat</del> <sup>exposure risk</sup> . Could mitigate with worker protection and engineering controls such as dust suppression techniques. <del>There</del> <sup>re</sup> maybe short-term noise and odor. The long-term benefits are those of A5 plus the removal of the hazard potential from soil contact by removal. A strong position public health benefit.
Public Welfare	Excavation and offsite disposal will have impact on roadways. Could disrupt local business, services and traffic patterns. A minimum of 550 truck loads will come and go from the site. To gain access to major highway would have to go <del>through</del> <sup>via</sup> either Zionsville or Lebanon. Can mitigate impact of trucks by scheduling of truck traffic so as to have least impact. To prevent disposal of contaminants offsite would have to adequately cover/wet down loads to reduce dust. Trucks would have to go through wheel washes and washdown areas before leaving site. Temporary influx of workers may bring business to town. May require use of local law enforcement personnel in traffic control.
Environmental	Same as A5 except potential for short-term runoff/erosion of soils is much greater due to volume being removed. Long-term will reduce loadings to groundwater.  A8 - SOIL EXCAVATION WITH ONSITE INCINERATION AND ONSITE DISPOSAL. CAPPING, GROUNDWATER COLLECTION AND TREATMENT
Public Health	Same as A4 except if pollution controls on incinerator fail then could have air pollution impacts from particulate <sup>emissions</sup> and hydrochloric acid fumes. This has a low probability of failure. Mitigated also by small target population. Incineration detoxifies contaminated soil removing hazard.
Environmental	Same as A7 except there may be localized impact from incineration on air quality depending upon stack height, pollution control, and plume dispersion.  A9 - SOIL EXCAVATION - ONSITE INCINERATION AND OFFSITE DISPOSAL - CAPPING GROUNDWATER COLLECTION AND TREATMENT
Public Health	Same as A8.
Public Welfare	Same as A7 except material if <sup>delisted</sup> may need less caution in handling.

Table ??? (Page 3 of 3)

Environmental

Same as A8.

A10 - SOIL EXCAVATION WITH THERMAL VOLATILIZATION AND OFFSITE DISPOSAL  
CAPPING - GROUNDWATER COLLECTION AND TREATMENT

Public Health

Same as A9 except slight chance of short-term air emission.

Public Welfare

Same as A9.

Environmental

Same as A7.

GLT533/33